REMARKS

Claims 52-76 are pending in this application. Claims 1-21 were canceled by a previous amendment. Claims 22-51 are canceled in this amendment, and new claims 52-76 are added.

Support for the new claims can be found throughout the application, sequence listing, and claims as filed. For example, support for claims 52-54 can be found in claims 24, 25, and 27, and in the specification, e.g., at page 12, lines 14-18, and at page 5, lines 10-25. Support for claims 55-57, 59, and 66 can be found in claims 31-33, 39, and 50, and in the specification, e.g., at page 6, lines 12-26, and at page 11, lines 14-26. Support for claims 58, 67, and 68 can be found in claim 37, and in the specification, e.g., at page 7, lines 4-5, and at page 10, line 31 to page 11, line 13. Support for claims 60-64, 69-70, and 76 can be found in claims 40 and 43-45, and in the specification, e.g, at page 7, lines 6-17, at page 12, line 20 to page 13, line 35, and at page 18, lines 1-7. Support for claims 65 and 71-75 can be found in claim 47, and in the specification, e.g, at page 7, lines 12-17, and at page 18, line 34 to page 22, line 2. No new matter has been added.

Oath/Declaration

A new application data sheet that identifies the city and foreign country of residence of all inventors is enclosed.

Claim Objections

Claims 22, 23, 37, 38, 44, 47, and 50 were objected to for reading on a non-elected invention. Claims 22, 23, 37, 38, 44, 47, and 50 have been canceled. Claims 37, 44, 47, and 50 have been rewritten in revised form as claims 58, 62, 65, and 66, respectively, solely to limit them to the elected invention.

Applicants request withdrawal of the objections to the claims.

Specification

The title of the invention was objected to as allegedly not descriptive. A new title is provided in the Amendments to the Specification.

The drawings were objected to for insufficient copy quality. New drawing sheets for all figures are attached hereto.

Applicants request withdrawal of the objections to the specification.

Priority

This application claims priority to Japanese applications 10/214720 and 10/297409, filed June 24, 1998, and October 19, 1998, respectively. Certified English translations of both applications are hereby provided. Applicants request that the Examiner acknowledge their claim of priority to these applications.

35 U.S.C. § 112, Second Paragraph

Claims 22-28, 31-34, 37-40, 43-47, 50 and 51 have been rejected as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter that applicants regard as the invention.

Applicants have canceled claims 22, 23, 26, 28, 34, 38, and 51 without prejudice, solely to further prosecution.

Applicants have canceled claims 24, 25, 27, 37, and 47, and rewritten them in revised form as claims 52, 53, 54, 58, and 65, respectively. These new claims recite an upper limit of 10 as the number of allowable deletions, additions, or substitutions. Furthermore, these new claims recite that the claimed polypeptides have hemopoietic factor receptor protein activity.

Applicants have canceled claims 31, 32, 33, 39, and 50 and rewritten them in revised form as claims 55, 56, 57, 59, and 66, respectively. These new claims recite the conditions under which the hybridization is to be performed.

Applicants have canceled claims 40, 43 and 44, and rewritten them in revised form as claims 60, 62, and 63, respectively.

Applicants have canceled claim 45 and rewritten this claim in revised form as claim 63. This new claim specifies that the nucleic acid sequences are operably linked.

Applicants have canceled claim 46 and rewritten this claim in revised form as claim 64. This new claim recites a second step of isolating the recited polypeptide, thus resulting in production of the polypeptide.

Applicants submit that the new claims as revised meet the requirements of 35 U.S.C. § 112, second paragraph, and request withdrawal of the rejections thereunder.

35 U.S.C. § 101 and § 112, First Paragraph

Claims 22-28, 31-34, 37-40, 43-47, 50 and 51 have been rejected as allegedly lacking utility and enablement.

Applicants have canceled claims 22-28, 31-34, 37-40, 43-47, 50, and 51 and have rewritten claims 24-25, 27, 31-33, 37, 39-40, 43-47, and 50 as claims 52-66. The revised claims are directed to specific human NR8 polypeptides and nucleic acids and vectors encoding the same. As indicated in the specification, NR8 polypeptides are hemopoietic factor receptors based on sequence homology to known receptors. The utility of hemopoietic factor receptors is well-established, as several hemopoietic factors and cytokines, including erythropoietin, G-CSF, GM-CSF, and IL-2, were being clinically applied at the time of filing, and others, including IL-11, LIF, and IL-12, were being considered for clinical trials (page 2). The involvement of hemopoietic factors and receptors in normal and disease states is a well-established utility.

In addition to the well-established utility of hemopoietic receptors, applicants also assert numerous specific utilities for NR8. For example, the specification notes that "NR8 is specifically expressed in hemopoietic cell lines, especially in granulocytic lines, and B cell lines" (page 8). Because of this specific expression of NR8, an anti-NR8 antibody can be used to separate these cell populations (page 8). The specification also cites the use of a soluble NR8 protein as a decoy-type receptor that can be used in the treatment of leukemias (page 9).

The Office Action alleges that the assertion that NR8 is a hemopoietic cytokine receptor was not a substantial assertion at the time the invention was made. Applicants respectfully

disagree, since the gene for NR8 was isolated based on similarity to known hemopoietic factor receptors (pages 3-4), and NR8 was found to be specifically expressed in hemopoietic cell lines, especially on granulocytic and B cell lines (page 8). Applicants also cite the use of NR8 to identify unknown hemopoietic factors, identify and separate hemopoietic cell populations, and prevent ligand binding to NR8 using a soluble decoy receptor for the treatment of leukemias (page 9). The assertion that NR8 is a hemopoietic factor receptor has been borne out through subsequent research. For example, Parrish-Novak et al., cited in the Office Action at page 9, demonstrates that NR8 is a receptor for the hemopoietic factor IL-21.

The asserted utilities for NR8 are credible. Proteins that are specifically expressed by certain cell populations are useful for identification of those populations, and soluble receptor proteins are useful to inhibit normal signaling between the receptor and its ligand by competing for free ligand. Thus, applicants respectfully submit that the presently amended claims meet both the utility and enablement requirements, and request that the Examiner reconsider and withdraw these rejections.

Claims 22-28, 31-34, 37-40, 43-47, 50 and 51 have been rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Applicants have canceled claims 22-28, 31-34, 37-40, 43-47, 50, and 51 and have rewritten claims 24-25, 27, 31-33, 37, 39-40, 43-47, and 50 as claims 52-66. These claims have been limited to the disclosed species and closely related sequences. Since applicants were clearly in possession of the presently claimed invention at the time of filing, applicants request that the Examiner reconsider and withdraw this rejection.

Rejections over Prior Art

Claims 22-28, 31-34, 37-40, 43-47, 50 and 51 have been rejected under 35 U.S.C. § 102(e) as allegedly anticipated by Donaldson et al., U.S. Patent Number 6,057,128. According to the Examiner, Donaldson et al. disclose a protein and nucleic acid sequence that are 100% identical to SEQ ID NO:7 and SEQ ID NO:8 of the instant application. The claims have been rewritten to exclude SEQ ID NO:7 and SEQ ID NO:8, thereby obviating the rejection.

Claims 22-28, 31-34, 37-40, 43-47, 50 and 51 have been rejected under 35 U.S.C. § 102(e) as allegedly anticipated by Presnell et al., U.S. Patent Number 6.576,744, which claims priority to September 23, 1998. Applicants submit with this response a certified translation of the Japanese Patent Application No. Hei 10-214720, filed June 24, 1998, to which the instant application claims priority. Hei 10-214720 discloses polypeptides and nucleic acids identical to SEQ ID NOs: 1-6 of the instant application (SEQ ID NOs: 1-6; claims 1-3 and 10; page 7, lines 2-28, page 8, lines 29-31, page 10, lines 19-25, page 13, lines 11-23), modified versions thereof (claims 5-7 and 9; page8, lines 2-19 and 26-28, and page 11, line 14 to page 13, line 10, and page 13, line 24 to page 14, line 5), vectors, transformants, and primers comprising the nucleic acid sequences (claims 11-12 and 17; page 8, line 32 to page 9, line 1, and page 9, lines 23-27, page 14, line 35 to page 17, line 35), methods of producing the proteins and antibodies thereto (claims 13 and 15; page 9, lines 2-5 and 14-16, page 14, lines 21-34), and methods of screening for compounds that bind to the polypeptides (claim 14; page 9, lines 6-13, page 22, line 3 to page 25, line 25).

Since the present claims are supported by this first Japanese application, they have an effective filing date of June 24, 1998. Since this date precedes Presnell et al., applicants submit that the rejection over Presnell is moot and respectfully request its withdrawal.

CONCLUSION

Applicants request that the Examiner reconsider and withdraw the rejections of pending claims 52-76. Enclosed is a $1020 check for the Petition for Extension of Time fee. Please apply any other charges or credits to deposit account 06-1050, referencing Attorney Docket No. 12660-002001.

Respectfully submitted,

Date: April 19, 2005

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Amendments to the Drawings:

The attached replacement sheets of drawings includes changes to Figs. 1-19 and replaces the original sheets including Figs. 1-19.

Attachments following last page of this Amendment:

Replacement Sheets (19 pages)